UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,168	09/29/2003	Marc J. Hildebrandt	KING-59C	1954

7590 05/18/2005

Christopher John Rudy
Ste. 8
209 Huron Ave.
Port Huron, MI 48060

EXAMINER	
GARBER, CHARLES D	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/674,168	HILDEBRANDT ET AL.	
	Examiner	Art Unit	
	Charles D. Garber	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 7-18* is/are pending in the application.

4a) Of the above claim(s) *3,12,15 and 18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,7,8,16 and 17* is/are rejected.

7)☒ Claim(s) *9-11,13 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Election/Restrictions

Amended claim 18 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

I. Claims 2, 8, 10 and 13, drawn to refrigerated component with passive cooling and live spaces, classified in class 165, subclass 174.

II. Claims 3 and 18 are drawn to refrigerated component with passive cooling and dead spaces, classified in class 165, subclass 179.

III. Claims 12 and 15 are drawn to viscometer with pin securing sample sleeves, classified in class 73, subclass 54.28.

Claims 1 and 16 are considered linking claims between the inventions as before and will be examined with the originally elected group drawn to refrigerated component with passive cooling and live spaces.

Claims 7 and 17 are considered generic claims and will be examined with the originally elected group drawn to refrigerated component with passive cooling and live spaces.

As previously indicated, inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as

claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)).

In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not include passive cooling moderation with live spaces such as in a Turbolator known in the art of heat exchangers for mixing to enhance heat exchange. The subcombination with dead space has separate utility such as insulation to inhibit heat exchange to prevent thermal damage at inlet points.

Inventions I, II and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)).

In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require pin. The subcombination with pin has separate utility such as preventing rotation and ensuring proper measurement by the viscometer rotating member.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits.

Accordingly, claim 18 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Additionally, claims 3, 12 and 15 were previously withdrawn from consideration as being directed to a non-elected invention.

Claims 1, 2, 7, 8, 9-11, 14, 13, 16 and 17 remain to be examined.

Claim Objections

Claims 9, 11 and 14 are objected to because of the following informalities: Claims depend either directly or indirectly from cancelled claims. Appropriate correction is required. Examination of the claims on the merits is not possible under the circumstances.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 7, 8, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turner et al. (US Patent 6,306,658) in view of Stokes et al. (US Patent 5,167,275).

Regarding claims 1 and 16, Turner discloses reactor vessel 100 which is an article of manufacture including block 106 which is a directly refrigerated component or system in which a passageway 300 with thermal fluid 290 flows (see figure 7 and column 11 lines 9-58) for "removing heat". Stirring blade 108, 702 may be used to measure viscosity (abstract, column 20 lines 30-62).

Turner does not expressly teach providing passive cooling moderation.

Stokes discloses a heat exchanger which is a manufactured article which is directly refrigerated including a refrigerating pathway 30 within heat exchange tube 12 also teaching passive cooling moderation by turbulator structure 24.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide passive cooling moderation such as with an insert "for increasing the heat transfer capacity of a heat transfer tube" and thereby improving the efficiency of the heat exchanger.

As for claims 2 and 17, the passages 38 and 30 are moderating live spaces with at least two cascade points provided at the ends of the turbulator. The live spaces and cascades points are critical to producing the turbulence effective for increasing the heat transfer discussed above.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the live spaces with at least two cascade points provided at the ends of the turbulator for the same reason discussed above.

As for claims 7 and 8, Turner discloses the block made of a thermally conducting material such as metal (column 11 lines 55-60). Figure 7 shows a plurality of vertically

oriented wells 104 into each of which is placed a sample vessel 102 or sleeve; a plurality of sample sleeves, and each of which can receive the oleaginous fluid and a rotor. Turner also discloses "temperature sensors (not shown) located in the reactor block 106". In another embodiment, Turner discloses a heater 262 around the vessel (figure 6 and column 10 lines 42-67). However, Turner discloses elements of the separate embodiments may be combined (column 11 lines 20-28). As discussed above, Turner disclosed a refrigerant passageway and Stokes taught the advantage of positioning a passive cooling moderator or "turbulator" in the passageway.

Allowable Subject Matter

Claims 10 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 10, Turner further discloses the block has a shape of a rectangularly shaped box as shown in figure 7 and the refrigerant pathway embraces a plurality of refrigerant pathways (column 11 line 40, lines 64-66). Stokes taught the advantage of positioning the passive cooling moderator in a passage as well as plural passages (figure 1 of Stokes). Turner further discloses the heater embracing a plurality of heaters inserted into said block (heaters for individual wells, column 11 lines 20-22).

However, as shown in figures 3, 4 and 6, Turner does not teach the heater inserted into the block horizontally or the temperature-sensing probe inserted into the block vertically. Rather, the Turner heaters are spiral and the sensors are horizontal. No other related prior art discloses or suggests a heater inserted into the block

horizontally or the temperature-sensing probe inserted into the block vertically as in the instant invention.

Claim 13, depending from allowable claim 10, is allowable for the same reason.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdg

CHARLES GARBER
PRIMARY EXAMINER